

BEFORE THE OFFICE OF THE COMMISSIONER OF RAILROADS

STATE OF WISCONSIN

On the Commissioner's Own Motion for a Determination of the Adequacy of Warning Devices at the Grade Crossing of the Wisconsin Central Ltd. Tracks with STH 55 in the Town of Harrison, Calumet County

9164-RX-574

FINDINGS OF FACT AND ORDER

On August 4, 2004, the Commissioner of Railroads directed the staff of the Office of the Commissioner of Railroads (OCR) to investigate the adequacy of warning devices under §195.28, Stats., at the grade crossing of the Wisconsin Central Ltd. (WCL) tracks with STH 55 in the Town of Harrison, Calumet County (Crossing No. 386 693R / MP 10.74).

An OCR investigator inspected the crossings in August, 2004. No hearing was held.

Findings of Fact

THE COMMISSIONER FINDS:

STH 55 is 24' wide in the vicinity of the crossing and intersects the railroad tracks at an angle of about 45° (left-hand forward). STH 55 carried an average daily traffic (ADT) of 9100 according to 2000 DOT records at a legal speed limit of 55 mph.

The WCL operates 4 train movements per day over the crossing at a timetable speed of 35 mph. The crossing consists of one mainline track.

A motorist traveling at 55 mph requires a safe stopping distance of 527'. The crossing is visible from more than 527' in each direction. Assuming a train speed of 35 mph, a motorist traveling at 55 mph needs to see a train when it is 380' from the crossing from a point 527' down the highway. The sight distance available from the safe stopping distance is inadequate in all quadrants except the northwest.

At all crossings, except those with gates, a driver stopped 15' short of the near rail must be able to see far enough down the track, in both directions, to determine if sufficient time exists for moving their vehicle safely across the tracks to a point 15' past the far rail, prior to the arrival of a train. Required clearing sight distance along both directions of the track, from the stopped position of the vehicle, is dependent upon the maximum train speed and the acceleration characteristics of the "design" vehicle. The necessary clearing sight distance at the STH 55 crossing is 775'. The available clearing sight distance is about 600' in each direction.

The exposure factor at this crossing is about 36,000. The exposure factor equals the product of the number of trains per day and the number of highway vehicles per day, which yields a numerical value for the potential conflicts each day at the crossing.

Two train-vehicle accidents have occurred at this crossing since 1973. The accidents occurred in 1994 (one fatality) and 1997 (one injury).

The Wisconsin Department of Transportation has produced a benefit-cost analysis for all at-grade crossings in the state. Installing new automatic flashing lights with gates and constant warning time circuitry at the STH 55 crossing has a net benefit of about \$272,000 (based on a cost of \$130,000). The benefit-cost ratio is about 2.57 meaning that the public will receive \$2.57 in safety benefits for each dollar expended. These calculations understate the net benefits because this order only requires the addition of gates, LED lamps, and constant warning time circuitry to the existing cantilevered signals.

The crossing currently has 12" incandescent cantilevered automatic flashing lights and advance warning signs for warning devices. The existing warning devices are inadequate. The existing warning devices will be adequate until such time as the new warning devices are installed. In order to adequately protect public safety gates, LED lamps, and constant warning time circuitry need to be added to the existing cantilevered signals because of the inadequate clearing sight distance, exposure factor, train speed, and projected net benefit.

Constant warning time circuitry adjusts for train speed and causes the crossing signals to always operate for the same amount of time before the train reaches the crossing, regardless of train speed. A motion detector simply detects the train operation, but does not adjust for train speed so that the amount of warning time varies based on train speed.

Light emitting diodes (LED) lamps replace incandescent bulbs. LEDs have higher conspicuity, a wider cone of vision, and longer life than incandescent lights. LEDs are especially useful on east-west roadways where the rising and setting sun may make the signals difficult to see.

Source of funding: The cost of the signal materials and installation shall be paid from OCR safety funds.

Conclusion on the Issue

THE COMMISSIONER CONCLUDES:

That in order to adequately protect and promote public safety, it is necessary to add gates, LED lamps, and constant warning time circuitry to the existing cantilevered automatic flashing lights circuitry at the crossing of the tracks of the Wisconsin Central Ltd. with STH 55 in the Town of Harrison, Calumet County.

Conclusion of Law

THE COMMISSIONER CONCLUDES:

That the jurisdiction of the Office of the Commissioner of Railroads under §195.28, Stats., extends to this matter. Accordingly, the Office enters an order consistent with the findings of fact.

Order

THE COMMISSIONER ORDERS:

1. That the **Wisconsin Central Ltd.** shall add and maintain gates, LED lamps, and constant warning time circuitry to the existing warning devices and other appropriate appurtenances in accordance with such plans as are filed with and approved by the Office of the Commissioner of Railroads at the crossing of its tracks with STH 55 at-grade in the Town of Harrison, Calumet County by **December 31, 2006** (Crossing No. 386 693R / MP 10.74).

2. That the **Wisconsin Central Ltd.** shall submit to the Office of the Commissioner of Railroads signal and circuit plans with the cost estimate of its proposed installation and upon completion of the signal project, a detailed statement of the actual cost to the Office and to the Wisconsin Department of Transportation.

3. That the signal installation work herein ordered shall not begin until the district office of the Wisconsin Department of Transportation informs the railroad that they may start such work and such start notice will not be issued until appropriate federal aid or other funding arrangements have been assured. The cost of the new project initiated before the start notice will not be reimbursed with public funds and shall be the responsibility of the railroad.

4. That the **Wisconsin Central Ltd.** shall bear no part of the cost of the crossing signals installation, except for any cost assessed to the railroad pursuant to §195.60, Stats., for the investigation of this matter by the Office. The railroad shall not pass on those assessment costs either directly or indirectly.

5. That if the petitioner, railroad or any interested party objects to this order and requests a hearing within 20 days of the date of this order in writing, the Office will hold a public hearing.

6. That jurisdiction is retained.

Dated at Madison, Wisconsin, _____.

By the Office of the Commissioner of Railroads.

Rodney W. Kreunen
Commissioner of Railroads

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